

RULES AND REGULATIONS



GOVERNING THE SUBDIVISION OF LAND IN DUNSTABLE, MASSACHUSETTS

REVISED: January 2006

Previous revision date: February 2003

DUNSTABLE PLANNING BOARD

SECTION I. AUTHORITY	1
SECTION II. GENERAL	1
A. DEFINITIONS	1
B. PLANS BELIEVED NOT TO REQUIRE APPROVAL	2
C. SUBDIVISION.....	2
SECTION III. PROCEDURE FOR THE SUBMISSION AND APPROVAL OF PLANS	3
A. PRELIMINARY PLAN	3
1. General.....	3
2. Contents	3
3. Fee for Preliminary Plan	4
4. Action on Plan	4
B. DEFINITIVE PLAN.....	4
1. General.....	4
2. Contents	5
3. Public Hearing.....	8
4. Review by Board of Health as to Suitability of the Land.....	8
5. Lot Size and Frontage.....	8
6. Action by the Board.....	8
7. Performance Guarantee.....	9
8. Record of Plan of Utilities.....	10
SECTION IV. DESIGN STANDARDS	11
A. STREETS	11
1. Location and Alignment.....	11
2. Width.....	12
3. Street Cross Section	12
4. Grade.....	12
5. Dead-end Streets	13
B. Storm Drains.....	13
1. Runoff Calculations	13
2. Conveyance Systems	13
3. Detention Ponds	14
4. Retention/Infiltration Systems.....	15
C. EASEMENTS.....	15
D. OPEN SPACE	15
E. PROTECTION OF NATURAL FEATURES	15
F. ALL UTILITIES SHALL BE PLACED UNDERGROUND AT THE TIME OF INITIAL CONSTRUCTION	16
G. TYPICAL SECTION	16
H. ACCESS TO RESIDENTIAL SUBDIVISION	16

SECTION V. REQUIRED IMPROVEMENTS FOR AN APPROVED SUBDIVISION	17
A. STREETS, ROADWAYS AND SIDEWALKS	17
B. UTILITIES	19
C. MONUMENTS.....	19
D. STREET SIGNS	20
E. TREES	20
F. CONSTRUCTION STANDARDS	20
G. CLEANING UP	22
H. MAINTENANCE.....	22
SECTION VI. ADMINISTRATION	22
A. CHANGES AND ALTERATIONS.....	22
B. VARIATION	22
C. REFERENCE.....	22
D. Severability

Appendix: Forms

APPENDIX: FORMS

Application for Endorsement of Plan Believed Not to Require Approval (Form A)
Determination of Approval Not Required (Form A-1)
Determination of Approval Required (Form A-2)
Application for Approval of a Preliminary Plan (Form B)
Certificate of Approval of a Preliminary Plan (Form B-1)
Certificate of Disapproval of a Preliminary Plan (Form B-2)
Application for Approval of Definitive Plan (Form C)
Certificate of Approval of Definitive Plan (Form C-1)
Certificate of Approval with Modifications of Definitive Plan (Form C-2)
Certificate of Disapproval of Definitive Plan (Form C-3)
Designers Certificate (Form D)
Certificate of Amendment, Modification or Rescission of Approval of Definitive Plan (Form E)
Covenant (Form F)
Performance Bond - Secured by Deposit (Form G)
Performance Bond - Surety Company (Form H)
Performance Bond by Registered Negotiable Securities (Form I)
Performance Secured by Bank Pass Book (Form J)
Conveyance of Easements and Utilities (Form L)
Plan Review Referral Form (Form M)
Plan Review Report Form (Form M-1)
Control Form (Form N)
Certificate of Completion (Form O)
Definitive Subdivision Submittal Checklist (Form P)
Fee Schedule

RULES AND REGULATIONS GOVERNING THE SUBDIVISION OF LAND IN DUNSTABLE, MASSACHUSETTS

PURPOSE (Section 81-M of Chapter 41 of the General Laws of the State of Massachusetts)

"The subdivision control law has been enacted for the purpose of protecting the safety, convenience and welfare of the inhabitants of the cities and towns in which it is, or may hereinafter be, put in effect by regulating the laying out and construction of ways in subdivisions providing access to the several lots therein, but which have not become public ways, and ensuring sanitary conditions in subdivisions and in proper cases parks and open areas. The powers of a Planning Board and of a Board of Appeal under the subdivision control law shall be exercised with due regard for the provision of adequate access to all of the lots in a subdivision by ways that will be safe and convenient for travel; for lessening congestion in such ways and in the adjacent public ways; for reducing danger to life and limb in the operation of motor vehicles; for securing safety in the case of fire, flood, panic and other emergencies; for insuring compliance with the applicable zoning ordinances or by-laws; for securing adequate provision for water, sewerage, drainage and other requirements where necessary in a subdivision; and for coordinating the ways in a subdivision with each other and with the public ways in the city or town in which it is located and with the ways in neighboring subdivisions."

SECTION I. AUTHORITY

Under the authority vested in the Planning Board of the Town of Dunstable by Section 81-Q of Chapter 41 of the General Laws, said Board hereby adopts these rules and regulations governing the subdivision of land in the Town of Dunstable.

SECTION II. GENERAL

A. Definitions

"Definitive Subdivision Plan" or Definitive Subdivision, or Definitive Plan shall mean all of the drawings, calculations and reports and any other material or documents submitted in support of the application for a subdivision of land into 2 or more parcels.

"Board" shall mean the Planning Board of Dunstable, Massachusetts.

"Lot" shall mean an area of land in one ownership, with definite boundaries, used, or available for use, as the site of one or more buildings.

"Design Storm" shall mean a rainstorm with a 5-year recurrence interval.

"Major Storm" shall mean a rainstorm with a 100-year recurrence interval.

"May" the term "may" will be interpreted to be permissive in nature.

"Shall" the term "shall" will be interpreted to be mandatory or obligatory in nature.

SEE M.G.L. CH. 41 FOR ADDITIONAL DEFINITIONS

B. Plans Believed Not to Require Approval

Any person who wishes to cause to be recorded in the Registry of Deeds or to be filed with the Land Court a plan of land, and who believes that the plan does not require approval under the Subdivision Control Law, shall submit a reproducible plan (24" x 36" maximum size and six (6) prints, and three (3) copies of the application for endorsement (Form A) to the Planning Board at a regularly scheduled meeting, accompanied by the necessary evidence to show that the plan does not require approval. In addition, the plan submitted shall show, according to scale, the location of the following: (a) all brooks, streams, ponds and other surface water drainage relevant to the parcels involved; (b) all abandoned roads, easements and rights of way whether previously of public record or not; (c) all building, structures, transmission lines and poles, monuments, boundary markers, stone walls, retaining walls, fences, abandoned wells and foundations, and any unusual topographic feature or features as deep pits, gulches, culverts, or the like; (d) a plat of the entire parcel of land from which the lots are being made; (e) a locus map with scale, at least 1,000 feet to an inch, to show no less than two (2) intersecting roadways; (f) a note stating "Endorsement of this plan by the Planning Board is not a finding as to conformance to zoning by-law". (g) a circle as required in Section 11.3.1 of the Zoning Bylaw. (h) inverse calculations for each lot. The Plan shall be based on and tied to at least one point in the Town of Dunstable Control System. Said applicant shall file, by hand delivery or by certified or registered mail a notice with the Town Clerk stating the date of submission for such determination and accompanied by a copy of said application (Form A).

With the submission of said ANR plan there shall be submitted a nonrefundable certified check in the amount shown on the fee schedule payable to the Town of Dunstable.

If the Board determines that the plan does not require approval, it shall, without a public hearing and within the period specified in state law, endorse on the plan the certification that Planning Board approval under Subdivision Control Law is not required. Said plan shall be returned to the applicant and the Board shall notify the Town Clerk of its action (Form A-1).

If the Board determines that the plan does require approval under the Subdivision Control Law, it shall, within the period specified in state law, so inform the applicant and return the plan. The Board shall also notify the Town Clerk of its determination (Form A-2).

C. Subdivision

No person shall make a subdivision within the meaning of the Subdivision Control Law of any land within the Town of Dunstable, Massachusetts, or proceed with the improvement or sale of lots in a subdivision, or the constructions of ways, or the installation of municipal services therein, unless and until a Definitive Plan of such subdivision has been submitted to and approved by the Planning Board as hereinafter provided.

SECTION III. PROCEDURE FOR THE SUBMISSION AND APPROVAL OF PLANS

A. Preliminary Plan

1. General

A Preliminary Plan of a subdivision of non residential land shall be submitted, and may be submitted for residential land to the Planning Board and the Board of Health by the subdivider for discussion and action. Submission of plan to the Planning Board shall be made at a regularly scheduled meeting of the Board. In submitting a Preliminary Plan, the subdivider shall give written notice, by hand delivery or registered mail, to the Town Clerk, stating the date of submission of such Preliminary Plan. The submission of such a Preliminary Plan will enable the subdivider, the Board, other municipal agencies, and owners of property abutting the subdivision to discuss and clarify the problems of such subdivision before a Definitive Plan is prepared.

2. Contents

The Preliminary Plan may be drawn on tracing paper with pencil and shall be at a suitable scale; six prints shall be filed at the office of the Board. Said Preliminary Plan should show sufficient information about the subdivision to form a clear basis for discussion of its problems and for the preparation of the Definitive Plan.

The Preliminary Plan shall show:

- (a) The subdivision name, boundaries, north point, date, scale, legend and title "Preliminary Plan";
- (b) The names of the record owner and the applicant and the name of the designer, engineer or surveyor;
- (c) The names of all abutters, determined from the most recent local tax list;
- (d) The existing and proposed lines of streets, ways, easements and any public areas within the subdivision in a general manner;
- (e) The approximate boundary lines of proposed lots, with approximate areas and dimensions;
- (f) The names, approximate location and widths of adjacent streets;
- (f) The topography of the land;
- (g) The proposed system of drainage, including natural waterways that will receive subdivision storm water flow,
- (h) Approximate location of wetlands, streams or other resource areas protected under the Rivers Protection or Wetlands Protection acts or similar local by-laws.

3. Fee for Preliminary Plan

With the submission of said preliminary plan there shall be submitted a nonrefundable certified check in the amount listed in the fee schedule payable to the Town of Dunstable.

A Project Review Fee for the Preliminary Plan shall be submitted by certified check at the time of application in the amount listed in the fee schedule payable to the Town of Dunstable and of which any balance remaining shall be applied to the Definitive Plan Project Review Fee or if the application is withdrawn, is refunded.

4. Action on Plan

The Planning Board shall within the time frame stated in state law or within any extension granted by the applicant give such preliminary plan its tentative approval (Form B-1), with or without modification. Such approval does not constitute approval of subdivision, but does facilitate the procedure in securing final approval of the definitive plan. The board may also disapprove the plan (Form B-2). If disapproved the board shall state in writing the reasons for disapproval. Any final action by the board shall be sent to the applicant and town clerk.

B. Definitive Plan

1. General

Any person who submits a Definitive Plan of a subdivision to the Planning Board for approval shall file the following with the Board at a regularly scheduled meeting and shall comply with the instructions herein:

- a) The Definitive Plan and ten contact prints thereof, dark line on white background. The Planning Board shall distribute copies of the Definitive Subdivision Plan to various town departments including the Board of Health, Board of Water Commissioners, Conservation Commission, Board of Road Commissioners, and Town Engineer for review and comments.
- b) A properly executed application Form C, including a statement of the time within which the required construction of ways and installation of municipal services will be completed. The time shall not be greater than two years from the date of approval of the Definitive Plan unless extended by the Planning Board in writing. The applicant shall file by hand delivery or registered mail a notice with the Town Clerk stating the date of submission for such approval, accompanied by a copy of the completed application (Form C).
- c) With the submission of said Definitive Plan there shall be submitted a nonrefundable certified check in the amount listed in the fee schedule payable to the Town of Dunstable. A Project Review Fee for the Definitive Plan shall be submitted by certified check at the time of application in the amount listed in the fee schedule payable to the Town of Dunstable with the option of the Board to

require up to an additional five thousand dollars (\$5,000) if the proposed plan presents an unusual number of lots, difficult terrain, or unexpected topographical or access problems.

- d) A list of names and addresses of all abutters certified by an Assessor of the Town of Dunstable that they appear as such on the most recent tax lists, together with a separate list of all changes in ownership of abutting land known to the subdivider.
- e) Completed designer's Certificate (Form D)
- f) List of waivers that are being requested from these Rules and Regulations, the reason for the request and the expected impact on the construction costs.
- g) Inverse calculations for the overall boundary, proposed streets on each lot or parcel.

2. Contents

The Lot Layout Plan portion of the Definitive Plan shall be prepared by a registered land surveyor; licensed by the Commonwealth of Massachusetts". The Plan shall be based on and tied to at least one point in the Town of Dunstable Control System. Water, streets, and drainage structures shall be designed by a registered professional engineer in the field of civil engineering, licensed by the Commonwealth of Massachusetts. The plan shall be at a scale one inch equals 40 feet or such scale as the Board may accept to show details clearly and adequately. The Lot Layout Plan shall conform to the requirements of the Registry of Deeds (or Land court if land is registered). If multiple sheets are used, they shall be accompanied by an index sheet showing the entire subdivision at appropriate scale. The plan shall be clearly labeled as Definitive Plan. The Cover Sheet shall list the size and quantity of each of the infrastructure improvements that will be presented to the Town for acceptance. The improvements shall include drain lines, manholes, catch basins and other appurtenances, water mains and fittings, valves, fire hydrants, service lines, curbing, streets, signs, and landscaping within the street right-of-way.

a) The Lot Layout Plan shall contain the following information:

- 1) Subdivision name, boundaries, north point, date, and scale.
- 2) Name and address of record owner, applicant and surveyor, and the proper seal of registration and signature.
- 3) Names of all abutters as they appear in the most recent tax list.
- 4) Lines of existing and proposed streets, ways, lots, easements (including purposes for which such are established), and public or common areas within the subdivision. Street names shall be proposed by the applicant and approved by the Board.
- 5) Sufficient data to determine the location, direction and length of every street and way line, lot line and boundary line, and to establish these lines on the ground.

- 6) Location of all permanent monuments properly identified as to whether existing or proposed. All monuments shall be tied to the Town of Dunstable control system.
 - 7) Location name and present width of streets bounding, approaching or within reasonable proximity of the subdivision.
 - 8) Suitable space to record the action of the Board and the signatures of the members of the Board (or officially authorized person).
 - 9) The monumentation used as the beginnings of the boundary survey.
 - 10) A circle as required in Section 11.3.1 of the Zoning Bylaw.
 - 11) All angle points of the open space or conservation easements shall be marked with 5/8" diameter iron rods 3 ft long marked with the appropriate cap provided by the Conservation Commission.
- b) The Plan/Profile Plan shall contain the following information:
- 1) For the new streets the existing profile on the center line and on both exterior lines, and the proposed profile on the center line of the new way at a horizontal scale of one inch equals forty feet and vertical scale of one inch equals four feet. Sheet size shall be 24" x 36". All elevations shall refer to NGVD192. The plan/profile drawing shall contain the distance, bearing, curve length, radius and central angle of the street centerline. If the pavement centerline is not the same as the right-of-way centerline, both shall be shown and identified. The plan view shall show the centerline stations at a minimum of every 50' and at the beginning and end of each curve.
 - 2) The Plan view shall also show the limits of the street right-of-way, pavement, curbing, location of sidewalks, water lines and appertances, utilities and drainage facilities, traffic control signs and street name signs.
 - 3) The profile shall show all drainage facilities, size, material, and slopes of all drain lines, station, rim elevation and invert elevations of all catch basins, and manholes. Pavement centerline station and elevation should be shown every 50' on tangents, beginning, and end of each vertical curve and every 25' in the vertical curve.
- c) The Grading Plan shall contain the following information:
- 1) Existing and proposed topography at a two foot contour interval, with spot elevations as needed to show existing conditions and proposed intent. All elevations shall refer to NGVD1927 .(Note proposed grading should anticipate design of the sewage disposal systems. Significant deviation from the Definitive Plan shall be grounds for revocation of the subdivision approval).

- 2) Streets, drainage facilities, utilities, lot lines, anticipated house locations, sewage disposal systems, test holes, existing and proposed well location and existing wells on adjacent property within 300" of the property line.
 - 3) Existing natural features including streams, ponds, lakes, rivers, wetlands, stone walls, cart paths, vegetation lines, trees 18" in diameter larger, ledge outcroppings, limit of the 100-year flood plain any all other significant features of a environmental, cultural or historic nature. If the site does not contain any area within the 100-year flood plain, a note so stating shall be placed on the plan.
- d) The Drainage calculations shall contain the following information:
- 1) Predevelopment drainage map showing the total drainage basin within which the project is located. This Plan shall include topography with a two foot contour interval and spot elevations as needed to provide a clear understanding of the conditions, ground cover conditions, soil types taken from the latest Soil Conservation Service (SCS) soil maps, design points, limits of the subcatchments for each design point, subcatchment name or designation and flow path for each subcatchment. The design points shall be the same as for the pre-development analysis.
 - 2) Post Development Drainage Maps showing the total drainage basin within which the project is located.
 - 3) Drainage calculations showing the peak rate of runoff, volume of runoff and time frame for each point of analysis, for both pre and post development conditions. For each storm event analyzed the calculations shall show the routing of the runoff from the subcatchment through the drainage facilities to the design point. The calculations shall address all runoff from the site regardless of whether it is over land flow or through a conveyance system. The depth of flow and velocity of the runoff through the conveyance system shall be included in the report.
- e) Cut/Fill Calculations
- Calculations showing the amount of material to be cut and filled in the subdivision. The calculations shall account for the stripping and stock piling of topsoil. The calculations presented shall include the raw cut and fill volumes and volumes with appropriate shrink/swell factors applied. The calculations shall identify the volume of material to be excavated for construction of the cellar holes for the buildings. If the design of the subdivision as shown on the plans, excavation of cellar holes and the foundations, and subsurface sewage disposal system result in an export of soil from the site the estimated amount, source, destination, anticipated time frame of movement and proposed routes shall be included with the information submitted to the Planning Board. The above information shall

be forwarded to the Board of Selectmen who shall regulate the removal of material in conformance with appropriate gravel removal by-laws.

3. Public Hearing

Before the board acts on an application for the Definitive Plan a public hearing shall be held by the Planning Board, notice of which shall be given at the expense of the applicant (cost is included in the application fee) at least ten days prior thereto by advertisement in an official publication, or in a newspaper of general circulation in Dunstable. Copies of said notice shall be mailed by the Planning Board by certified returned receipt mail to the applicant and to all owners of land abutting upon the land included in such plan as appearing on the most recent tax list, and information submitted with the application.

4. Review by Board of Health as to Suitability of the Land

The Board of Health shall be supplied one (1) copy of the Definitive Plan. The Board of Health shall file a report with the Planning Board within 45 days of the filing of the plan. If the Board of Health determines that any of the land in the subdivision cannot be used as building sites, such land or lots shall not be subject for approval as building lots by the Planning Board. Any approval of the plan by the Planning Board shall only be given on condition that lots or land shall not be built upon without prior consent of the Board of Health, and shall endorse on the plan such condition.

Any approval by the Board of Health under this section shall not be construed as approval of any septic system or building permit for any of lot shown on the definitive subdivision plan.

If the Board of Health does not file a report with the Planning Board containing specific findings and the reasons for the finding within the required 45 days, and the Planning Board subsequently approves the subdivision, a note shall be placed on the plan prior to endorsement stating that the approval of the subdivision by the Board of Health is by failure to report.

5. Lot Size and Frontage

All lots shall be of such size and dimensions and have frontage to meet or exceed the minimum requirements of the Zoning By-Laws.

6. Action by the Board

The Planning Board shall, within the time frame contained in the state law or extension requested by the applicant, after the submission of the Definitive Plan, approve (Form C-1), approve with modifications (Form C-2), or disapprove the subdivision (Form C-3).

If the Plan is approved, before the Board endorses the approved plan, the applicant shall:

- a) Revise the submittal to comply with the Conditions of Approval.
- b) Submit a copy of the revised plan to the Town Engineer who shall review said plans and notify the Board in writing that the required modifications have been made. Submit original reproducible plans on drafting film for the Board's endorsement and one digital copy of the plans in AutoCAD. DWG or compatible DXF format.
- c) Submit a completed Covenant (form F) or suitable Security (Forms G, H, I, or J). If Security is being requested, an itemized cost estimate including unit prices and quantities should be submitted to the Town Engineer and Road Commission for review and comment. The cost estimate shall include all work related to the subdivision or shown on the Definitive Plan except individual house, well and septic system construction.
- d) Before the release of any portion of the Security, the developer shall submit, for the Board's approval and acceptance, a Maintenance Bond sufficient to cover the maintenance costs of the streets in the development until they are accepted at the Town meeting.

The action of the Board with respect to such plan shall be by vote, copies of which shall be certified and filed with the Town Clerk and sent by registered mail, postage prepaid to the applicant. If the Board modified or disapproves such a plan, it shall state in its vote the reasons for its action. Final approval, if granted, shall be endorsed on the reproducible drawings of the plans by the signatures of a majority of the Board (or by the signature of the person officially authorized by the Board), but not until the statutory twenty-day appeal period has elapsed following the filing of the certificate of action of the Board with the Town Clerk, and said Clerk has notified the Board that no appeal has been filed.

After the Definitive Plan has been approved and endorsed, the applicant shall furnish the Board with five (5) additional prints thereof, and one set of reproducible plans on stable base polyester drafting film.

Final approval of the Definitive Plan does not constitute the laying out or acceptance by the Town of streets within subdivision.

7. Performance Guarantee

- a) Before endorsement of a Definitive Plan of a subdivision, the subdivider shall either file a performance bond (Form H) or deposit money (Form G) or negotiable securities (Form I) or bank pass book (form J) in an amount determined by the Board to be sufficient to cover the cost of all or any part of the improvements, or follow the procedure outlined in "b" below. The

amount of the bond or deposit shall be based upon cost estimates of required work approved by the Planning Board. Such bond or security if filed or deposited shall be contingent on the completion of such improvements within two years of the date of the security. The security shall not be released by the Planning Board until it has established that the work required has been completed in accordance with the approved plans and has been inspected and found satisfactory according to the standards of the Board of Health Road Commission, Water Commission and the Planning Board.

- b) Instead of filing a bond or depositing surety, the subdivider may request approval of the Definitive Plan on condition that no lot in the subdivision shall be sold and no building shall be erected thereon until the improvements are constructed and installed so as to serve the lots adequately. Such conditions shall be contained in a separate Covenant (Form F) which shall be referred to on the plan and recorded in the Registry of Deeds. When the subdivider has completed the required improvements specified for any lots in subdivision, he may request a Release of Conditions for said lots, (Form O) If the Planning Board has established that the work required has been completed in accordance with the approved plans and has been inspected and found satisfactory according to the standards of the Board of Health and Road Commission and Water Commission, and Town Engineer the Board will execute and deliver to the subdivider such Release, which shall be in form for recording in the Registry of Deeds (Form O). Thereafter the conditions relating to such lots as so released shall terminate

8. Record of Plan of Utilities

An accurate record plan and profile shall be submitted to the Planning Board after completion of the construction showing road work, drainage lines and structures, water mains and appurtenances, and all other utilities and improvements to all drainage facilities. The drawing shall show rim and invert elevations, slopes, pipe size and material, and roadway monuments, as actually installed with sufficient ties for proper identification.

See Section III, Par. B, 2, f.

If material is to be removed from the site, upon completion of the road, drainage, utilities, and grading, a plan shall be submitted to the Board showing the existing contours of the development. Calculations should accompany the plan showing the actual cuts and fills that took place during the construction of the project. If areas remain in the project where the foundations or subsurface sewage disposal systems have not been excavated the volumes anticipated from these excavations should be identified and included in the calculations.

A minimum of 50% of the bond or security originally posted for the project shall

be retained by the Planning Board until the As-built plans Form L and calculations are accepted and approved by the Planning Board. No street shall be recommended to Board of Road Commissioners for acceptance as a Public Way if the As-built plans and calculations are not in substantial compliance with the approved Definitive Plans.

SECTION IV.Design Standards

A. Streets

1. Location and Alignment

- a) All streets in the subdivision shall be designed so that, in the opinion of the Board, they will provide safe vehicular and pedestrian travel. Due consideration shall also be given by the subdivider to the attractiveness of the street layout in order to obtain the maximum livability and amenity of the subdivision. Street layout is subject to Planning Board approval.
- b) The proposed streets shall conform to the Master or Study Plan as adopted in whole or in part by the Board.
- c) Provisions, satisfactory to the Board, shall be made for the proper projection of streets or for access to adjoining property which is not yet subdivided.
- d) Reserve strips prohibiting access to streets or adjoining property shall not be permitted, except where, in the opinion of the Board, such strips shall be in the public interest.
- e) Street jogs at intersections with centerline offsets of less than one hundred and twenty-five (125) feet shall be avoided. Streets shall be continuous and in alignment with existing streets as far as possible.
- f) The minimum centerline radii of curved streets shall be one hundred and twenty-five (125) feet. Greater radii may be required by the Board.
- g) Streets shall be laid out so as to intersect as close to right angles as possible. No street shall intersect any other street at less than sixty (60) degrees.
- h) Property lines at street intersections shall be rounded or cut back to provide for a property line radius of not less than twenty (20) feet. Greater radii shall be required at intersections with principal town roads and where deemed necessary by the Board.
- i) All proposed intersections shall be designed to provide intersection sight distance as recommended in The Policy on Geometric Design

of Highways and Streets by AASHTO. On streets without a posted speed limit, a value of 45 MPH shall be used. Other values may be used if supported by actual speed studies using the 85-percentile rule, and approved by the Board.

- j) All streets shall be designed to provide stopping sight distance as recommended in The Policy on Geometric Design of Highways and Streets by AASHTO. On streets without a posted speed limit, a value of 45 MPH shall be used. Other values may be used if supported by actual speed studies using the 85-percentile rule, and approved by the Board.

2. Width

The minimum width of rights-of-way shall be fifty-five (55) feet.

3. Street Cross Section

All streets shall have

- a) 2-10' lanes for travel
- b) 1-8' lane for parking
- c) Planting strips for snow storage, hydrants, trees, grass, and shrubs as shown on the street section drawing, Figure 1 of these regulations
- d) 2-5' sidewalks (one each side)

As shown in the standard cross-section drawing in this document.

4. Grade

- a) Grade of streets shall not be less than 1.0%. Grades shall not be more than 6%, except where in the opinion of the Board a greater grade is required due to unusual topographic conditions in which case grades up to 12% may be permitted.
- b) At intersections, a leveling area no steeper than 2% shall be provided for a minimum distance of one hundred (100) feet.
- c) All changes in grade shall be connected by vertical curves of sufficient length to provide smooth transition and sight distance. The minimum vertical curve length required is one hundred and fifty (150) feet.
- d) Driveway grades shall not exceed 6%. Driveway grades shall not exceed 1% within twenty-five (25) feet of the curb. The Planning Board may approve a greater grade to no more than 12% if in its opinion the intent of these regulations are met and further due to unusual topographic conditions.

5. Dead-end Streets

- a) Dead-end streets shall serve no more than six (6) lots based upon the minimum frontage requirements of the particular zoning district nor be longer than six hundred (600) feet from the beginning to the outside of the turn-around.
- b) Dead-end streets shall be provided, at the closed end, with a turn-around with an outside roadway diameter of one hundred (100) feet and a property line diameter of not less than one hundred twenty (120) feet. The outside radius of the island shall be 40 feet.

B. Drainage

All drainage facilities shall be designed to conform to the Stormwater Management Guidelines published by the Department of Environmental Protection regardless of the size of the project or number of lots proposed.

1. Run off calculations

- (a) The drain system and site grading will be designed such that the storm water runoff for a design storm will be contained within the pipes, ditches, and curb lines of the street. Runoff from the major storm will be contained within the right of way of the streets and any drain easements.
- (b) The design shall incorporate facilities to ensure that the rate of runoff from the site during post-development conditions is no greater than that under pre-development conditions. Subcatchment areas should be drawn such that the impact of proposed development on all abutters can be determined.
- (c) Unless approved otherwise by the Board all hydrographic calculations shall be prepared using the Soil Conservation Service method based on TR-20 or TR-55 using the following rain fall amounts. 2 yr. - 3.1", 5 yr. - 3.9", 10 yr. - 4.5", 100 yr. - 6.4"

2. Conveyance System

- (a) Minimum size for drain pipes is 12" diameter, design calculations shall be submitted showing that the velocity of at least 2.5 feet per second is attained during the design storm and no more than 10 feet per second is attained during the major event. When pipes sizes change at a manhole the inverts shall be set such that the energy grade line or crown of the pipes match.
- (b) Generally, ditch side slopes should be as flat as practical with 4:1 being the steepest allowed. The maximum depth of flow in a ditch

shall be 2.5'. Ditches with longitudinal slopes flatter than 2.5% shall include a trickle channel for low flows. Calculations shall show the velocity of the water in the channel and data to show that the proposed erosion control measures are sufficient. Ditches shall be designed to have one foot of free board when conveying runoff from the major storm.

- (c) Manholes shall be placed whenever there is a change in pipe size, direction, slope or material. In no case, shall there be more than 350 feet between manholes.
- (d) Catch basins shall be spaced along the gutter of streets as needed such that the depth of flow in the gutter shall not be greater than two inches during the design storm. Catch basins shall also be placed at the point of curvature at intersection to prevent water from flowing through an intersection. In no case shall water flow in a gutter more than 350 feet.

3. Detention Ponds

Detention ponds, used as part of the storm water management system, shall conform to the following criteria:

- (a) Minimum slope through the pond is 2%. A trickle channel shall extend from the inlet of the pond to the outlet.
- (b) The minimum diameter for the outlet pipe shall be 12". Orifice plates or other control structures may be used if needed to control the rate of discharge.
- (c) Side slopes shall be no steeper than 3:1.
- (d) A minimum of one foot of free board shall be maintained during the major storm.
- (e) Ponds shall incorporate emergency overflow provisions capable of passing the runoff from the major storm in case the normal outlet is closed or otherwise inoperable. Erosion protection shall be placed at the inlet and discharge points of the pond and at the emergency overflow area. Trash racks shall be incorporated into the design to keep the discharge of the pond clear. An easement shall be provided around each pond a minimum of 10 feet horizontally from the top of the pond bank or water level for the major storm or outside bottom of the berm to allow access to the pond for maintenance. This easement shall connect with an exiting public

street or street proposed in the subdivision. The maximum slope along the access shall not be greater than 5:1.

4. Retention/Infiltration systems

Generally, retention facilities are not the preferred methods of mitigating the increase in rate of run off from development. If an infiltration system is proposed, the following additional information must be submitted.

- (a) Determination of seasonal high water elevation. This may be determined by soil horizon analysis, or actual measurement during the spring season. If actual measurements are used the elevation observed may be adjusted in dry years.
- (b) Infiltration rates must be supported by field-testing
- (c) If during construction, soil conditions are observed that are different from those used in the design, additional testing and redesign may be required

C. Easements

Easement for utilities across lots or centered on rear or side lot lines shall be provided where necessary and shall be at least twenty (20) feet wide.

Where a subdivision is traversed by a water course, drainage way, channel or stream, the Board shall require that there be provided a storm water easement or drainage right-of-way of adequate width to conform substantially to the lines of such water course, drainage way, channel or stream and to provide for construction or other necessary purposes, including access for maintenance.

D. Open Space

Before approval of a plan the Board may also, in proper cases, require the plan to show a park or parks suitably located for playground or recreation purposes, or for providing light and air. The park or parks shall not be unreasonable in area in relation to the land being subdivided and to the prospective uses of such land. The Board, may by appropriate endorsement on the plan, require that no building be erected upon such park or parks for a period of not more than three years without its approval. This land shall be made available for purchase by the Town. Failure to purchase within three years shall free the owners from these restrictions.

E. Protection of Natural Features

Due regard shall be shown for all natural features, such as large trees, water courses,

scenic points, historic spots, and similar community assets, which, if preserved, will add attractiveness and value to the subdivision.

Under the existing Wetland Protection Act or any amendment thereto, M.G.L. Chap. 131, S. 40 "No person shall remove, fill, dredge or alter any bank, fresh water wetland, coastal wetland, beach, dune, flat, marsh, meadow or swamp bordering...on any...creek, river, stream, pond or lake, or any land under said water...without filing written notice of his intention to so remove, fill, dredge or alter, including such plan as may be necessary to describe such proposed activity and its effect on the environment, at least sixty days prior to any such removing, filling, dredging or altering. Said notice shall be sent by certified mail to the Conservation Commission." The Planning Board may condition its approval of the plan upon the issuance of an "Order of Conditions" by the Conservation Commission.

F. Utilities

All Utilities shall be placed underground at the time of initial construction.

All the proposed streets shall include water mains and appertances in conformance with the requirements of the Board of Water Commissioners and their Rules and Regulations.

G. Typical Section

See Figure 1

H. Access to residential subdivision

Any residential subdivision must include an access within the Town limits. Any access to a subdivision through another town requires certification from that town that the street is in accordance with plan and subdivision requirements of that town, that the security posted is adequate and that the access is adequate for expected traffic.

Planning Board may, following its public hearing and consultation with the Police Chief, Fire Chief, Town engineer and Road Commission require the developer to submit a traffic study. The study shall address :

- 1) Existing conditions and level of service
- 2) The impacts of the proposed project
- 3) The impact of other anticipated projects in the area.

A finding that the proposed project would decrease the existing level of service or that the existing roadway system would not provide adequate access would be grounds for denial of the project.

SECTION V. REQUIRED IMPROVEMENTS FOR AN APPROVED SUBDIVISION

A. Streets, roadways and sidewalks

Unless stated otherwise in these Rules and Regulations, all material, workmanship and methods shall conform to the latest (English Units) edition of the Massachusetts Highway Department (MHD) Standard "Specifications for Highways and Bridges".

1. Clearing and grubbing

The clearing and grubbing in the right-of-way shall be kept to a minimum. The area to be cleaned shall be cleared of all stumps, brush, roots, boulders, like material and all trees not intended for preservation.

- a) All topsoil shall be removed for the full length and width (18" past gutter line) of the paved roadway; regardless of whether or not finished grade is above existing grade.
- b) All other material shall be removed for the full length and width of the roadway, to a depth of at least sixteen (16) inches below the finished grade as shown on the profile plan; provided, however, that if the soil is soft or spongy, or contains undesirable material, such as clay, sand pockets, tree stumps, or any other material detrimental to the sub-grade, a deeper excavation below the subgrade shall be made; as required by the Planning Board.
- c) All roadways shall be brought within 4 inches of finished grade as shown. The Gravel shall extend 18" past the gutter line on each side of the road.

2. Street Construction

Subgrade in fill sections shall consist of well-graded granular material, compacted with vibratory rollers to a minimum relative density of 95% Standard Proctor. Fill shall be placed and compacted in layers not to exceed twelve (12) inches. After the road has been graded to an elevation 16 inches below the finished grade, 8 inches (after compaction) of coarse sand and gravel shall be spread and rolled with vibratory rollers of sufficient weight to achieve a minimum relative density of 95% Standard Proctor. This sand and gravel sub-base shall conform to Section M1.03.0

Type b, of the MHD, "Standard Specifications for Highways and Bridges."

Selected sand and gravel shall consist of inert material that is hard, durable stone and coarse sand, free from loam and clay, surface coatings, and deleterious materials. Gradation requirements for gravel shall be determined by AASHTO-T11 and T27 and shall conform to the following:

<u>Sieve</u>	<u>percentage Passing</u>
1/2 inch	50-85
No. 4	40-75
No. 50	8-28
No. 200	0- 10

The largest dimension of the maximum size stone in the gravel shall be 3 inches.

A 4-inch layer (after compaction) of sand and gravel shall be placed on top of the 8-inch sub-base coarse. This 4-inch base coarse shall be compacted to a minimum relative density of 95% Standard Proctor and conform to Section M1.03.0 Type c. Gradation requirements are as shown above, except that the largest dimension of the maximum size stone in the gravel shall be 2 inches.

The two-layered, sub-base and base may consist of dense-graded crushed stone, which conforms to Section M2.01.7 of the "Standard Specifications for Highways and Bridges."

The paving shall consist of 4" (after compaction) of Massachusetts Modified Plant Mixed Bituminous Concrete, composed of materials and prepared in conformity with the most recent "Standard Specifications for Highway and Bridges" of the Massachusetts Highway Department. It shall be applied in two courses, 2 " compacted thickness standard binder course, and 2" compacted thickness top course. Spreading and rolling also shall be in accordance with Massachusetts Highway Department specifications. Equipment for spreading and finishing bituminous concrete shall be mechanical, self-powered pavers, capable of spreading and finishing the material to true line, grade, width, and crown by means of fully automated controls for both longitudinal and transverse slope.

3. Drainage

Pipes shall have watertight, structurally sound joints. Pipe materials, joint specifications and construction methods shall conform to the Massachusetts Highway Department Standard Specifications. Drains shall be laid to uniform grades on a uniform firm foundation, so as to provide support throughout the entire pipe length. Trench bottoms shall be dug cylindrically to support the external pipe diameter to one-third of the pipe depth. All trenches shall be backfilled and carefully compacted, in 6-inch lifts, with vibratory equipment. Material used for backfill shall be sand and gravel, free from loam and clay and stones greater than 1".

Under-curb drainage is required in cut sections to drain the base course of roads, at locations dictated by good design procedure, in accordance with Massachusetts Highway Department Standard Specifications and as directed by the Planning Board. Heavy-duty manholes shall be provided in accordance with Massachusetts Highway Department Standard Specifications. Manhole foundations must be adequate to support traffic loads in soil upon which the foundation bears.

Connections to manholes shall be constructed watertight.

4. Sidewalks

Sidewalks shall be constructed on both sides of all streets. The profile, dimensions, and location are shown in the Figure 1 herein. The grade shall be at least 6" above the adjacent roadway. Sidewalks shall be: 4" thick cement concrete, reinforced with a No. 4, 4" X 6" mesh, 2,500 lbs. concrete, wood float finished, laid on a base of at least 12" of well compacted bank gravel. An expansion joint (3/4" open) shall be provided at least every 20'; dividing joints shall be scored into walk every 4'. Base gravel material shall be placed to a compacted depth of 12 inches in accordance with Section V. A. 2 of these regulations.

5 Curbing

Curbing is required on both sides of all streets. Granite curbs shall be required and shall have a 6" minimum width at the top; 4" minimum at bottom and have a minimum depth of 17". Curbing shall be set on at least 6" of compacted bank gravel and in accordance with the cross-section shown in Figure 2

6. Topsoil and its Removal

On grass strip areas, at least 8" of topsoil (depth after compaction) shall be applied. Seeding of lawn grass shall be done after building construction has been completed on the particular lots adjacent.

B. Utilities

Water pipes, electric telephone and cable television conduits, gas mains and related equipment, such as hydrants and main shutoff valves, shall be sized and constructed to serve all lots on each street in the subdivision; joints shall be left uncovered until inspected. Water serviced lines shall be extended from the main to each property line before the street is surfaced. Shut-off valves to each lot shall be located in the grass area within the right-of-way. All utility trenches shall be filled with gravel meeting the requirements above carefully compacted.

C. Monuments

Granite or reinforced concrete monuments, a minimum of 30" in length, shall be installed at all points of curvature and tangency and at each angle point of the right of way and at other points where, in the opinion of the Board, permanent monuments are necessary. Such monuments shall conform to the standard specifications of the Massachusetts Land Court and shall be set according to such specifications. No permanent monuments shall be installed until all construction that would destroy or disturb the monument is completed. Bounds shall be set flush with finished grade.

D. Signs

1. Street Signs

The developer shall furnish and erect street signs to designate the name of each street in his development; said signs shall conform to the specifications of those used by the Town and shall be located as directed by the Planning Board. Street names shall be submitted by the developer and approved by the Planning Board.

2. Traffic Control Signs

The developer shall furnish and erect all traffic control signs needed for the development. Signs shall conform to the specifications of those used by the town, and shall be located as directed by the Planning Board.

E. Trees

Every effort shall be made to preserve the existing trees on the right-of-way and on the lots to be sold. Filling shall be done in such a manner as to preserve the trees wherever possible. The Planning Board shall require that the subdivider provide and plant at least six (6) suitable shade trees (variety approved by the Planning Board) per lot having a minimum height of twelve (12) feet. Four (4) trees shall be planted on lots at least 10 feet from the exterior line of the street right-of-way. Two (2) trees shall be planted between curbs and sidewalks for each 200 feet of lot frontage.

F. Construction Standards

1. General

The construction of these facilities shall be made only during weather and under conditions allowing for the fulfillment of good construction standards. In addition to periodic, unscheduled inspections and tests, the following are required. The developer is responsible for notifying the Board 48 hours before the requested inspection. Written approval from the Board or its agent is required before construction proceeding to the next step

2. Inspection

- a) Stake out of the limits of clearing.
- b) Before placement of any fill.
- c) During placement of any fill and compaction, including berms for detention/retention facilities.
- d) Before backfilling any trench for storm drains, water, or under drain pipes.

- e) After stakeout but before construction of swales or drainage channels.
- f) After final subgrade is prepared.
- g) During the placement, compaction and shaping of sub-base.
- h) Upon completion of the sub-base work, the developer shall submit an As-Built profile of the sub-base along the centerline and gutter line locations and the drain system, prepared by a Massachusetts licensed surveyor or civil engineer.
- i) Inspection of 8" gravel base.
- j) Inspection of 4" gravel base.
- k) Installation of bituminous base course.
- l) After curb installation, before backfilling, during the grading of shoulder areas and embankments, loaming and seeding and installation of monuments.
- m) Installation of bituminous top course.

3. Testing

- a) In fill areas deeper than three feet, as directed by the Board but no more frequently than 1 per every 500 feet of road.
- b) In place density tests for sub-base and gravel base 1 per every 500 feet road.
- c) Sieve Analysis of sub-base and granular base material 1 per every 1,000 feet (or less) of road.
- d) The contractor shall have available, during the inspection of the granular base surface, a fully loaded single axle dump truck (gross load 22,400) or dual axle tandem unit (gross load 36000) for proof rolling of the final compacted granular base.
- e) The Board may require the developer to submit test results of core samples of the installed and compacted bituminous base course and top course, at a frequency of no greater than 1 per 250 feet of road.

Any material or installation not meeting the requirements shall be removed and replaced.

G. Cleaning Up

Upon completion of all work on the ground, the subdivider shall remove from the streets and adjoining property, all temporary structures and all surplus material and rubbish which may have accumulated during construction, and shall leave the work in a neat and orderly condition.

H. Maintenance

If released from restrictions concerning sale of lots or building on lots by the posting of a security, the subdivider shall maintain the drain system and roads for vehicular travel in a manner satisfactory to the Board. Further, the subdivider shall maintain the drain system and roads in subdivision in a condition that meets all the above requirements to the satisfaction of the Board until acceptance of such roads by vote of the Town.

SECTION VI. ADMINISTRATION

A. Changes and Alterations

No changes or alterations shall be made in an approved Definitive Plan without submitting the changes for approval of the Planning Board.

B. Variation

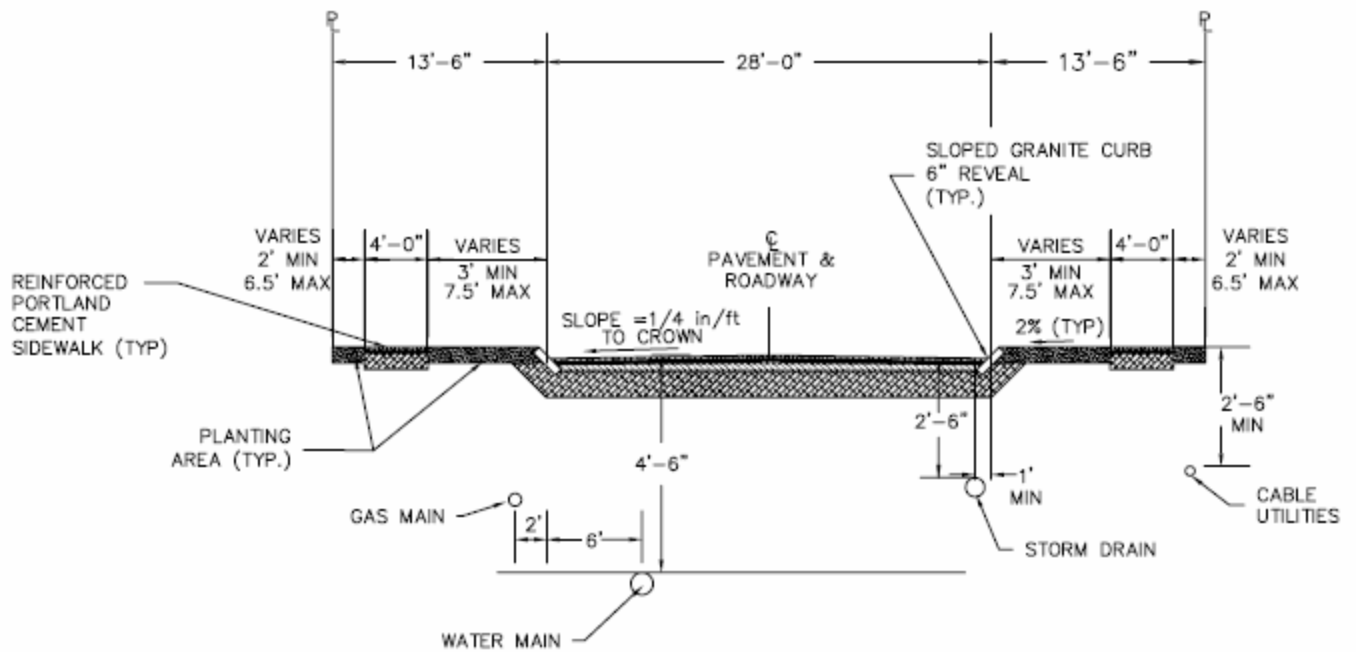
Strict compliance with the requirements of these rules and regulations may be waived, when, in the judgment of the Board such action is in the public interest and not inconsistent with the Subdivision Control Law.

C. Reference

For matters not covered by these rules and regulations, reference is made to Sections 81-K and 81-GG, inclusive of Chapter 41 of the General Laws of the State of Massachusetts.

D. Severability

If any portion of these Rules and Regulations are declared void or unenforceable by a court, such actions shall not affect the other sections of this document.



STREET CROSS SECTION

NOT TO SCALE

FIGURE 1